

WHAT IS CLAIMED IS:

- 1 1. A method of establishing a subsequent path across a network to be used
2 to transport traffic carried along an initial path in the event of a failure or
3 signal degradation on said initial path, said method comprising:
 - 4 receiving a digest representative of resources used along said initial
5 path, each of said resources along said initial path known by at least
6 one node on said initial path;
 - 7 establishing said subsequent path, using said digest so that said
8 subsequent path may use resources distinct from said resources used
9 along said initial path.
- 1 2. The method of claim 1, wherein said digest comprises a Bloom filter
2 representative of resources known to each of said nodes.
- 1 3. The method of claim 2, wherein said Bloom filter has a fixed number of
2 bits, and may provides an authoritative indicator that a resource is used by
3 said initial path.
- 1 4. The method of claim 3, further comprising adding information representing
2 said resources along said initial path to said Bloom filter at each of said
3 nodes.
- 1 5. The method of claim 1, wherein each of said nodes on said initial path
2 contributes knowledge known thereat to form said digest.
- 1 6. The method of claim 4, wherein said initial path extends from an
2 originating node to a terminating node on said network, and said digest is
3 received at said originating node.
- 1 7. The method of claim 6, wherein said digest is received as a part of a
2 message confirming establishment of said initial path.

3 add said indicator to said digest;

4 and pass said digest to said adjacent node.

1 18. The node of claim 17, wherein said digest comprises a Bloom filter, and
2 said node is operable to modify said Bloom filter to reflect said resources.

1 19. The node of claim 18, wherein said indicator is formed as said node
2 acknowledges formation of said path.

1 20. The node of claim 19, wherein said path extends from an originating node
2 to a termination node on said network, and said indicator is passed
3 upstream towards said originating node along said path.

1 21. A node on a communications network operable to establish a secondary
2 path across said network, said secondary path capable of carrying traffic
3 carried along an initial path, in the event of a fault or signal degradation
4 along said initial path, said node operable to use a digest representative of
5 resources used along said initial path in establishing said secondary path,
6 each of said resources along said initial path known by at least one node
7 on said initial path, so that said subsequent path may be established using
8 resources distinct from said resources used along said initial path.

1 22. Computer readable medium storing processor executable instructions that
2 when loaded at a node capable of establishing a path on a network, adapt
3 said node to pass an indicator of resources used along an established
4 path and known to said network node to an adjacent node on said
5 established path.